

## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date  
14 October 2004 (14.10.2004)

PCT

(10) International Publication Number  
**WO 2004/087944 A1**

(51) International Patent Classification<sup>7</sup>: C12Q 1/42, G01N 33/50

(21) International Application Number: PCT/GB2004/001436

(22) International Filing Date: 1 April 2004 (01.04.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
0307470.5 1 April 2003 (01.04.2003) GB

(71) Applicant (for all designated States except US): UNIVERSITY OF DURHAM [GB/GB]; Durham DH1 3HP (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): SLABAS, Antoni, Ryszard [GB/GB]; 8 Telford Close, High Shincliffe, Durham DH1 2YJ (GB). CHIVASA, Stephen [ZW/GB]; 12A Front Street, Framellgate Moor, Durham DH1 5EJ (GB). NDIMBA, Bongani kaiser [ZA/GB]; 87 Rothbury Road, Newton Hall, Durham DH1 5QE (GB). LINDSEY, Keith [GB/GB]; 25 Hallgarth Street, Durham DH1 3AT (GB).

(74) Agent: LIPSCOMBE, Martin, John; Keith W Nash & Co, 90-92 Regent Street, Cambridge CB2 1DP (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

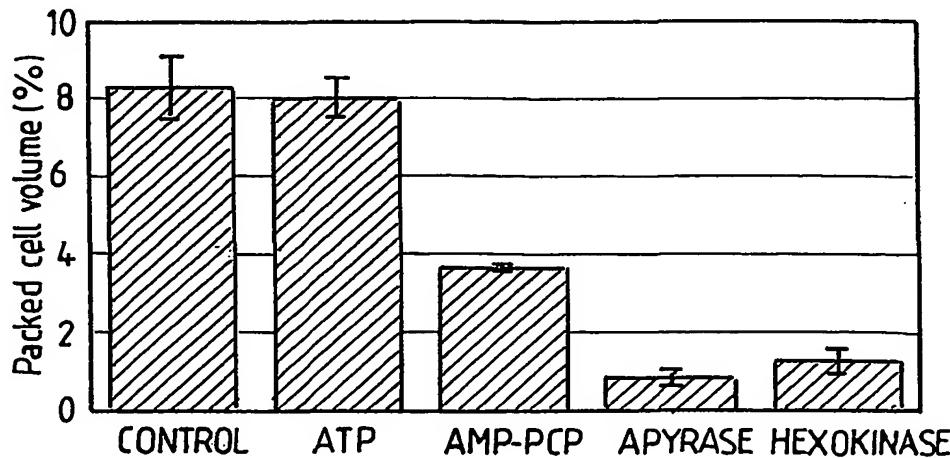
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: IMPROVEMENTS IN OR RELATING TO VIABILITY



WO 2004/087944 A1

(57) Abstract: Disclosed is a method of killing a plant cell or plant cells by activating a cell death pathway, which pathway is activatable by depletion of extracellular NTP, especially ATP, available to the cell for hydrolysis by cellular NTPase (especially ATPase) enzymes.